

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alexander Krymski et al.

Application No.: 09/527,422

Confirmation No.: 4176

Filed: March 17, 2000

Art Unit: 2622

For: HIGH-SPEED SAMPLING OF SIGNALS IN
ACTIVE PIXEL SENSORS

Examiner: J. P. Misleh

SUPPLEMENTAL REQUEST FOR RECONSIDERATION

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Applicants thank Examiner Misleh for his time on the May 15, 2009 teleconference with Applicants' representative Matt Weinstein, during which the outstanding 35 U.S.C. § 103(a) rejection over Merrill and Sauer was discussed. As per the conversation, Applicants are filing this supplemental request for reconsideration to more particularly detail their argument that Sauer explicitly teaches away from combination with Merrill in the manner the Office suggests.

According to the Final Office Action dated January 16, 2009, claims 1-2, 4-5, 7-9, 15, 17, 19, 20, and 40-41 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,512,544 to Merrill et al. ("Merrill") in view of Sauer (US 6,320,616). This rejection is respectfully traversed.

As previously discussed, claim 1 defines a method of processing pixel signals and recites, among other things "clamping a pixel readout line to a voltage level less than a voltage corresponding to a pixel signal; *subsequently* coupling the pixel readout line to an output of a

source-follower transistor and reading out the pixel signal onto the pixel readout line; [and] *subsequently* clamping a capacitive storage node in a pixel signal processing circuit to a voltage less than a voltage corresponding to the pixel signal appearing on the pixel readout line.” (emphasis added). Claim 15 defines an imager and recites similar limitations.

As the January 16, 2009 Office Action admits, Merrill fails to teach or suggest “*subsequently* clamping a capacitive storage node in a pixel signal processing circuit to a voltage less than a voltage corresponding to the pixel signal appearing on the pixel readout line”. (Office Action, pgs. 3-4). The Office Action argues that Sauer teaches “[w]hen CL and SH go high... the APS reference voltage of 3.801 V [is] applied to node 157 and reference voltage VR (3V) [is] applied to node 156... [t]hus, capacitor C2 receives a charge corresponding to... -0.801V,” and therefore, Sauer cures the Merrill deficiency. More specifically, the Office Action cites Merrill for the first “clamping” and “coupling” steps of claim 1 and Sauer for the second “clamping” step. (Office Action of January 16, 2009, pgs. 3-4).

In the April 16, 2009 Request for Reconsideration, Applicants argued that even assuming Merrill (which reads a rising pixel signal) could be combined with Sauer (which reads a falling pixel signal) without rendering the references inoperable for their intended purpose, Sauer simply does not teach or suggest “*subsequently* clamping a capacitive storage node in a pixel signal processing circuit to a voltage less than a voltage corresponding to the pixel signal appearing on the pixel readout line” (emphasis added). To the contrary, the disclosure cited by the Office Action as teaching the claimed limitation (at pgs. 3-4) plainly occurs *before* Sauer transfers charge from its photodetector 116 for read out.¹ (Sauer, col. 7, lns. 38-39; col. 8, lns. 13-16). In other words, the Sauer disclosure cited by the Office Action expressly teaches away from the claimed limitation. Sauer specifically states “[n]ext, while the SH line remains high, the CL line is switched low... [l]ess than 1 μ s after CL switches low... transistor M1 [is] switch[ed] on... caus[ing] any charge stored during the integration period... to be transferred.” (Sauer, col. 7, lns. 50-65).

¹ Applicants note that this fact was also discussed in Applicant’s Request for Reconsideration filed October 21, 2008, but not addressed by the January 16, 2009 Office Action.

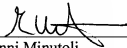
Applicants respectfully submit that the Advisory Action mailed May 11, 2009 did not address this point when it states that “[these] argument[s] would be relevant if Sauer was relied on exclusively to reject Claim 1. However, Merrill was relied on for a first portion of Claim 1 and Sauer was relied on for the remaining portion.” (Advisory Action, pg. 2). It is germane that “[i]t is improper to combine references where the references teach away from their combination.” MPEP §2145. As Applicants have noted, the Sauer reference explicitly teaches away from “*subsequent*[] clamping” *after* “the pixel signal [has appeared] on the pixel readout line,” as claim 1 recites. (emphasis added). To the contrary, Sauer only teaches that clamping occurs *before* “transistor M1 [is] switch[ed] on... caus[ing] any charge stored during the integration period... to be transferred,” *i.e., before* transfer of charge to the pixel readout line. (Sauer, col. 7, lns. 50-65).

Accordingly, Applicants maintain that the Merrill and Sauer combination is improper and claims 1 and 15 are allowable over the Merrill and Sauer combination. Claims 2, 4-5, 7-9, 17, 19, 20, and 40-41 depend, respectively, from claims 1 and 15, and are believed to be patentable at least for the above mentioned, as well as on their own merits.

Applicants therefore respectfully request reconsideration of the outstanding rejection and urge that, considering the above arguments, the rejection be withdrawn and the claims allowed. The Director is hereby authorized to charge any deficiency in fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. M4065.0802/P0802

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